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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,285

08/11/2006

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT

PAPER NUMBER

1795

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,285	Applicant(s) YACHI ET AL.	
	Examiner Martin J. Angebrannt	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/11/06</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9-12 and 14-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims require a photopolymerization initiator to function as a holographic recording material.

3. Claim 20 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 20 recites thicknesses of 10-200 microns which includes a range thinner than that required in claim 19, upon which it depends.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9,10,12,13 and 18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Wreede et al. '720 as evidenced by Gladden '106.

Wreede et al. '720 teaches a dichromated gelatin hologram which is initially exposed to a flood exposure to desensitize the surface regions and which cross-links and harden these regions, but allows them to be subsequently exposed to record a hologram (4/38-18).

Gladden '106 teaches that in dichromated gelatin the differences in the refractive indices are due to different degrees of hardening/crosslinking (2/3-25). These are coated from aqueous solution.

The examiner holds that the partially cured dichromated gelatin layer of Wreede et al. '720 inherently meets the claims, with Gladden evidencing that the hardening of the fringe regions and the surfaces is due to crosslinking of the gelatin by the dichromate ion.

7. Claims 9-18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by McGinniss '274.

Example 1 forms an epoxide having pendant tertiary amines with a polymer having pendant mercaptan groups, which is then reacted with melamine acrylate and photoinitiators (benzophenone and micheler's ketone) which is then heated to induce crosslinking (partial curing) and then fully cured using polymerization. (6/63-7/26). Example 7 is similar but forms

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a polyurethane which is then reacted with the reaction product of neopentylglycol and mercaptopropionic acid to form a polymer with pendant tertiary amine and mercaptan groups, which was then reacted with melamine acrylate and photoinitiators (benzophenone and Michler's ketone) which is then heated to induce crosslinking (partial curing) and then fully cured using polymerization. (8/40-9/5). See also examples 5 and 11.

The thermal curing at least partially crosslinks the polymer to form the three dimensional matrix which is demonstrated to still be photosensitive.

8. Claims 9-18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Schwalm et al. AU 200076604.

Example 4 forms a polymer by reacting the diisocyanate with the polyol (cresol), thioglycolic acid (a thiol) and hydroxyethyl acrylate, diethanol amine, triethylamine and a photoinitiator, this is heated in a drying oven for 150 degrees (which induces crosslinking to form the three dimensional matrix) which is demonstrated to still be photosensitive as evidenced by examples A7. (see page 21)

9. Claims 9-18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Suzuki JP11-339319.

Suzuki JP11-339319 teaches an optical disk comprising two substrates bound together via a tacky binder layer, which is a radiation curable and pressure sensitive adhesive. Acrylic polymer 3, comprises an acrylic polymer resulting from the reaction of **butyl acrylate (75 parts)**, **2-ethylhexylacrylate (25 parts)**, acrylic acid (10 parts) and **2-hydroxyethylacrylate (1 part)** [0036]. A urethane acrylate is added to this together with a photopolymerization initiator and a **polyisocyanate** crosslinking agent (1-3 parts) to form the composition of example 7 in

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table 1 [0038-0041]. These composition is coated on PET, dried at 120 degrees C and another PET separator applied. The PET sheets were half cut and peeled away and the optical disk substrates contacted with these and the cured using radiation [0044-0050]. The thermal crosslinking agents give the initial strength [0022-0023]. The formation of air bubble is disclosed as prevented/reduced (abstract, [0045-0050]. This layer can be 35-60 microns [031]

10. Claims 9,12 and 18-20 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Smithey et al. '012.

See example 1 which describes the Br being bound to the gelatin and cast using a 1 inch O-ring as the mold.

The examiner holds that the O-ring is inherently at least 1 mm thick, which is more than 1000 microns.

11. Claims 9-18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Watanabe et al. JP 2003-3331475.

See example 1 which combines butyl acrylate, acrylic acid, hydroxyethyl methacrylate and azobisisobutyronitrile to form a hydroxyl pendant comatning polymer which is combinaed with methacryloyloxyisocyanate and Colunate L which coated to a thickness of 30 microns. This is heated to crosslink it and UV cured.

12. Claims 9-18 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Curcic et al. '364

See example 1, which is heated using IR and then photocured.

13. Claims 9-18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Tamura et al. '398.

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See comparative example 2, which contains the usethane acrylate PUA_1, a thermosetting epoxy, a photoinitiator and thermosetting catalyst applied to a thickness of 30 microns. (table 1 and [0124]).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Martin J Angebranndt/
Primary Examiner, Art Unit 1795

Martin J Angebranndt
Primary Examiner
Art Unit 1795

1/21/2009